



# Back On Our Map

Green-winged Orchid Survey, Propagation and Reintroduction  
Methods

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# 1. Introduction to BOOM

Back on Our Map (BOOM) aimed to re-engage communities in South Cumbria with their natural environment, by restoring the landscape and reintroducing and reinforcing locally threatened or extinct native species. National Lottery players supported the £2m project, alongside several other public, private and charitable sector organisations. Led by the University of Cumbria, BOOM worked closely in partnership with Morecambe Bay Partnership, and lead partners including Cumbria Wildlife Trust, Natural England and Forestry England.

The project restored habitat and reintroduced species across a network of protected areas including Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Arnside and Silverdale Area of Outstanding Natural Beauty (AONB). It covered an area of 600km<sup>2</sup>, extending along the lowlands of Morecambe Bay from Barrow-in-Furness in the west to Arnside and Silverdale in the east and Ambleside in the north (Figure 1.1).

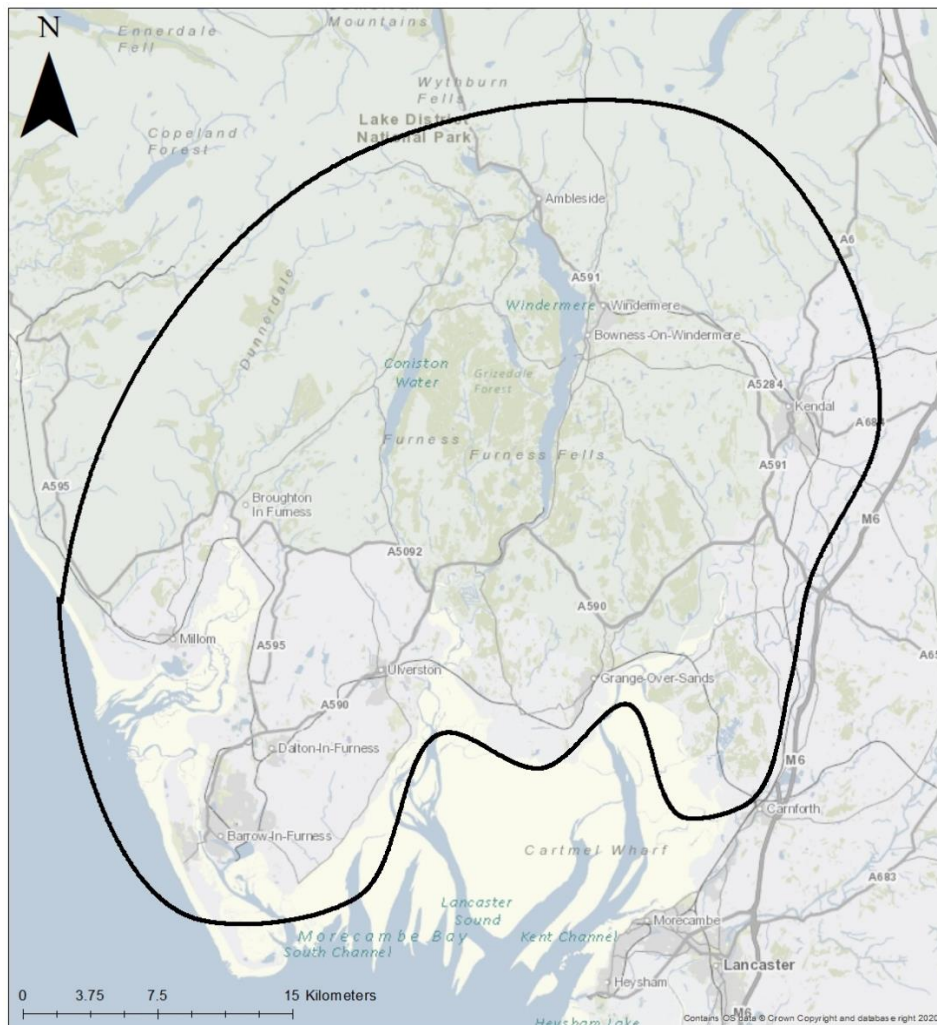


Figure 1.1: Map of the BOOM working area.

BOOM reintroduced and expanded the range of the hazel dormouse, Duke of Burgundy and small blue butterfly, goldilocks aster, great and oblong green-winged orchid, green-winged orchid, maidenhair fern, spiked speedwell, and aspen (table 1.1). The pine marten community-based feasibility study identified suitable locations for future reintroduction. For the Corncrake, public engagement sound walks raised awareness of the species.

**Table 1.1:** Species included in the BOOM project.

<b>Common Names</b>	<b>Scientific Name</b>	<b>BOOM Objectives</b>
Aspen	<i>Populus tremula</i>	Reintroduction
Corncrake	<i>Crex crex</i>	Public Engagement and Interpretation
Duke of Burgundy	<i>Hamearis lucina</i>	Reintroduction
Goldilocks Aster	<i>Galatella linosyris</i>	Reintroduction
Great Green-winged orchid	<i>Drosera anglica</i>	Reintroduction
Green-winged Orchid	<i>Anacamptis morio</i>	Reintroduction
Hazel Dormice	<i>Muscardinus avellanarius</i>	Reintroduction
Maidenhair Fern	<i>Adiantum capillus-veneris</i>	Reintroduction
Oblong-leaved Green-winged orchid	<i>Drosera intermedia</i>	Reintroduction
Pine Marten	<i>Martes martes</i>	Feasibility Study
Small Blue	<i>Cupido minimus</i>	Reintroduction
Spiked Speedwell	<i>Veronica spicata</i>	Reintroduction

Across south Cumbria, the project engaged a wide range of community groups, volunteers and members of the public. Reintroduction-based social activities and training events helped communities get involved with the BOOM species reintroductions.

This document covers the work BOOM did on the great green-winged orchid and the oblong-leaved green-winged orchid, including the propagation techniques, reintroduction methods and community engagement events.

## 2. Species Background

The green-winged orchid (*Anacamptis morio*) is a short orchid of unimproved hay meadows, pastures, coastal grassland and open woodland. It grows in base-rich alkaline soils and prefers sunny conditions. It flowers in May or June and the flower spike carries a cluster of pink to purple flowers (sometimes white) with distinctive green lines on the outer tepals that give this orchid its name. In Britain and Ireland, core populations are scattered throughout southern England and the Welsh coastline with small and isolated populations in South Cumbria.

Green-winged orchid populations have declined dramatically in the last 50 years and the current geographic range of the species in the UK has contracted by 60% compared to its historical range. These losses have been particularly acute in southern, central and eastern England and the species is categorized as vulnerable in The Vascular Plant Red Data List for Great Britain and the IUCN Red List of Threatened Species.

Green-winged orchid populations have declined as a result of agricultural intensification during the second half of the twentieth century and the associated loss of hay meadows and unimproved grassland habitats. Orchid seeds contain too little energy in the form of food reserves to germinate on their own and form a symbiotic relationship with mycorrhizal fungi to grow. The loss of these fungi through the application of artificial fertilisers and herbicides has largely restricted this orchid to unimproved grasslands.

BSBI records show 46 entries for *A. morio* in the Morecambe Bay area since 2010. The remaining populations of *A. morio* at Latterbarrow and Humphrey Head are within statutory designated areas which are managed by the Cumbria Wildlife Trust (CWT) for their biodiversity value. These sites are not subjected to intense agricultural improvement through the application of herbicides and fertilizers. The population of *A. morio* at The Lots (National Trust, Silverdale) are not protected by statutory designation but are still benefitting from a management prescription designed to assist the ongoing success of the *A. morio* and other species at this site. While the population at The Lots is stable and possibly growing, at Latterbarrow and Humphrey Head there are signs of decline. Populations at all of these sites are susceptible to decline if appropriate management for the species (conservation grazing/cutting) is discontinued or altered, allowing the establishment of competitive vegetation such as tall grasses and scrub. A strategic implementation of reinforcements and reintroductions across the Morecambe Bay area will strengthen the metapopulation structure and reduce the likelihood of local extinction.

The aim to reinforce populations of this spectacular and rapidly declining species has attracted widespread support from the community as well as local stakeholder groups including the Cumbria Wildlife Trust, Natural England and the National Trust. The propagation at Kew will be carried out by Dr Sarasan and has been endorsed by the senior scientific committee who consider this work to be crucial in restoring green-winged orchid populations in South Cumbria. Community volunteers will be involved in population monitoring at donor and recipient sites,

and local growers and landowners will be offered specific training in orchid cultivation methods and habitat management to sustain viable populations beyond the term of the BOOM project.

### 3. Reintroduction Objectives

The process for surveying, propagating and reintroducing the green-winged orchid is categorised in table 3.1.

**Table 3.1:** Objectives of the BOOM project for green-winged orchid propagation and reintroduction

<b>Section Number</b>	<b>Topic</b>	<b>Overview</b>
3.1	Project Locations	Donor and reintroduction site details
3.2	Partners and Consents	The National Trust and Cumbria Wildlife Trust were the key partners for the orchid reintroduction.  Consent was gained from Natural England for material collection
3.3	Site Surveying	Explanation of the survey methods used to determine population size at donor sites
3.4	Seed/Material Collection	Collection of seeds from the donor population.
3.5	Propagation	Propagation initially done by Kew. Methods replicated in the University of Cumbria's Laboratories.
3.6	Reintroduction Methods	Reintroduction site locating and methods used
3.7	Monitoring	Current and future monitoring practices

### 3.1. Project Locations

**Figure 3.1:** Donor and reintroduction sites for the green-winged orchid

Donor Sites

Reintroduction Sites

### 3.2. Partners and Consents

**Table 3.2:** Summary of partners involved with the green-winged orchid reintroductions.

<b>Partner</b>	<b>Person</b>	<b>Consent or Training Given</b>	<b>Role</b>
Cumbria Wildlife Trust	Pete Jones	Consent	Own Latterbarrow, Brown Robin and manage Humphrey Head Advised on where and how to reintroduce green-winged orchids.
National Trust	John Hooson	Consent	Own The Lots, Jack Scout and Arnside Knott. Granted access permission to survey and harvest green-winged orchids.
Natural England	Jacqui Ogden Tracy Cumberbatch	Consent	Granted SSSI permissions to reintroduce green-winged orchids. Granted access permission to plant green-winged orchids on Gaitbarrows NNR
Kew Garden	Viswambharan Sarasan	Training	Grew 1000 green-winged orchids from seed. Delivered green-winged orchid propagation training.

### 3.3. Donor Site Surveying

The Lots, Silverdale

Humphrey Head

Additional Sites

Recommendations

### 3.4. Seed/Material Collection

Recommendations

### 3.5. Propagation

Kew Gardens

University of Cumbria

Recommendations

### 3.6. Reintroduction Methods

Surveying

[Meathop Moss](#)

[Foulshaw Moss](#)

Planting

[Great Green-winged orchids at Foulshaw Moss](#)

Recommendations

### 3.7. Monitoring

Monitoring is vital to assess how well the green-winged orchid reintroduction is going. As the sites where they have been planted are all slightly different, it is important to note where the green-winged orchids are flourishing and which habitats they are not doing so well in.

Counting Individual Plants

Flowers

Recommendations

## 4. Community Engagement Objectives

### 4.1. Public Engagement

BOOM have delivered various engagement activities throughout the project. In lockdown in 2021 Steven Lipscombe gave an online presentation for Morecambe Bay Partnership's "Sunset Series". Here he spoke about the plans for the green-winged orchids, Maidenhair Fern and green-winged orchids to various members of the public. A benefit of digital online events is the ability to engage larger audiences with this species (over 100 people have viewed the online talk about green-winged orchids) without putting pressure on delicate habitats that would be negatively impacted by large numbers of people visiting.



**Table 4.1:** Summary of community engagement for green-winged orchids

<b>Activity</b>	<b>Date</b>	<b>Number of Attendees</b>
Online Talk – Orchids, Green-winged orchids and Ferns		150
Green-winged orchid planting day with Kew	21/09/2021	25
Planting out and monitoring reintroduced orchids	Sept 2021 – May 2023	10
Transferring plantlets from agar to soil		4
University of Cumbria Student visits (Gaitbarrows and Latterbarrow)		20
<b>Total</b>		<b>186</b>

Recommendations

#### 4.2. Propagation and Planting

Recommendations

## 5. Conclusions and Summary

## Appendices

Appendix 1: BOOM Project Aims

Appendix 2: Green-winged Orchid Reintroduction Locations